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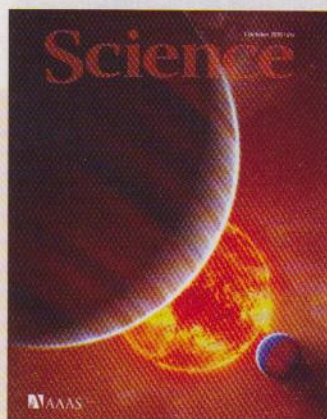
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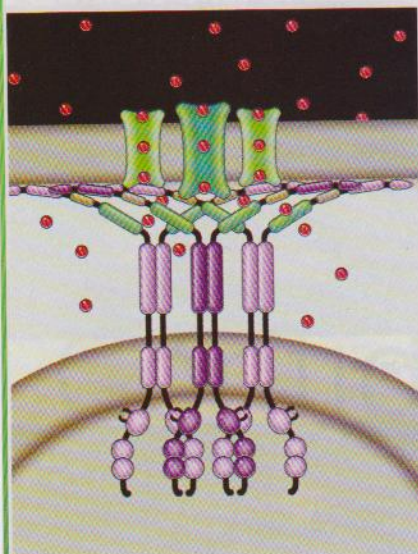
An artist's rendition of the Kepler-9 system in which two Saturn-size planets transit the same star. The radii of the planets are roughly 8% of the radius of the star, which itself is 10% larger in radius than our Sun. Timing variations in the transits of these planets provide a signature of their gravitational interaction and can be used to establish their masses. See page 51.

Image: NASA/Ames/JPL Caltech/T. Pyle

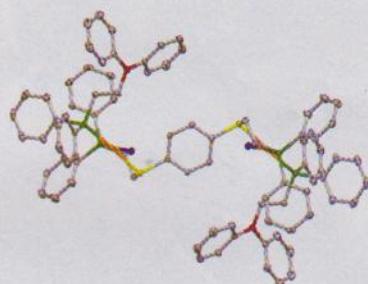
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- 66 Allosteric Supramolecular Triple-Layer Catalysts**  
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- 70 Isoprenoid Pathway Optimization for Taxol Precursor Overproduction in *Escherichia coli***  
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- 78 Human Adaptation and Plant Use in Highland New Guinea 49,000 to 44,000 Years Ago**  
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- 101 The CRAC Channel Activator STIM1 Binds and Inhibits L-Type Voltage-Gated Calcium Channels**  
C. Y. Park et al.
- 105 The Calcium Store Sensor, STIM1, Reciprocally Controls Orai and Ca<sub>v</sub>1.2 Channels**  
Y. Wang et al.  
The sensor protein that monitors depletion of intracellular calcium regulates two classes of calcium entry channels.  
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## SCIENCEONLINE

## SCIENCEEXPRESS

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**Fossil Evidence for Evolution of the Shape and Color of Penguin Feathers**

*J. A. Clarke et al.*

A fossil penguin shows that the wing and feather form evolved before distinctive microstructural changes in the feathers.

10.1126/science.1193604

**Evidence for a Collective Intelligence Factor in the Performance of Human Groups**

*A. W. Woolley et al.*

A metric for group performance on a battery of cognitive tasks yields a group intelligence quantity: collective intelligence.

10.1126/science.1193147

>> *Science Podcast*

**Structure of a Eukaryotic CLC Transporter Defines an Intermediate State in the Transport Cycle**

*L. Feng et al.*

The structure of a chloride transporter and its regulatory domain provides insight into the ion-exchange mechanism.

10.1126/science.1195230

**Polarized Myosin Produces Unequal-Size Daughters During Asymmetric Cell Division**

*G. Ou et al.*

Motor proteins help to produce developmentally distinct daughter cells during development.

10.1126/science.1196112

## TECHNICALCOMMENTS

**Comment on "The Human K-Complex Represents an Isolated Cortical Down-State"**

*F. Amzica*

Full text at [www.sciencemag.org/cgi/content/full/330/6000/35-a](http://www.sciencemag.org/cgi/content/full/330/6000/35-a)

**Response to Comment on "The Human K-Complex Represents an Isolated Cortical Down-State"**

*S. S. Cash et al.*

Full text at [www.sciencemag.org/cgi/content/full/330/6000/35-b](http://www.sciencemag.org/cgi/content/full/330/6000/35-b)

## SCIENCENOW

[www.sciencenow.org](http://www.sciencenow.org)

**Highlights From Our Daily News Coverage**

**Primordial Magnetic Field May Permeate the Universe**

Halos in images of supermassive black holes reveal another possible big bang leftover.

**Mating Games at Meerkat Manor**

Study with animal TV stars reveals the sophisticated strategy of dominant females.

**The Sun Can Lob Curveballs**

Scientists discover that some solar magnetic storms will loop toward Earth.

## SCIENCE SIGNALING

[www.sciencesignaling.org](http://www.sciencesignaling.org)

The Signal Transduction Knowledge Environment

**RESEARCH ARTICLE: Signaling from the Endoplasmic Reticulum Activates Brassinosteroid Signaling and Promotes Acclimation to Stress in *Arabidopsis***

*P. Che et al.*

BR signaling may integrate stress responses and growth processes to optimize growth under challenging environmental conditions.

**RESEARCH ARTICLE: Coupling Mechanism of a GPCR and a Heterotrimeric G Protein During Chemoattractant Gradient Sensing in *Dictyostelium***

*X. Xu et al.*

Imaging analyses and computer simulations suggest that a G protein-coupled receptor and its G protein associate only in the presence of ligand.

**RESEARCH ARTICLE: Molecular Mechanism of Calcium Channel Regulation in the Fight-or-Flight Response**

*M. D. Fuller et al.*

**PERSPECTIVE:  $\beta$ -Adrenergic Regulation of the L-Type  $\text{Ca}^{2+}$  Channel  $\text{Ca}_v1.2$  by PKA Rekindles Excitement**

*J. W. Hell*

Modulation of cardiac  $\text{Ca}^{2+}$  channels by protein kinase A in the fight-or-flight response involves their proteolytic processing and just the right amount of anchoring protein AKAP.

**PERSPECTIVE: Sphingolipids—The Oil on the TRAFire That Promotes Inflammation**

*G. Napolitano and M. Karin*

Lipid second messengers are required for signaling through tumor necrosis factor and Toll-like receptors.

## SCIENCE CAREERS

[www.sciencereers.org/career\\_magazine](http://www.sciencereers.org/career_magazine)

Free Career Resources for Scientists

**Taken for Granted: Making Book on America's Universities**

*B. L. Benderly*

A spate of recent books presents a wide range of analyses—and some common answers—about what ails academe.

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*E. Pain*

Voluntary activities such as helping to organize conferences offer early-career scientists opportunities to gain new skills and broaden horizons.

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Integrating Medicine and Science

**COMMENTARY: Why University-Industry Partnerships Matter**

*A. M. Boccanfuso*

Optimizing the process by which discoveries are translated to innovative products requires enhanced links between academia and industry.

**PERSPECTIVE: Bacterial Exploitation of Host Cell Signaling**

*R. Lu and M. B. Goldberg*

A new bacterial phosphatase that perturbs host-cell signaling circuits highlights a class of pathogen proteins that may serve as potent therapeutic targets.

**RESEARCH ARTICLE: Interfering with Resistance to Smoothed Antagonists by Inhibition of the PI3K Pathway in Medulloblastoma**

*S. Buonamici et al.*

Resistance of medulloblastoma to Smo antagonists can be delayed or prevented by specific drug combinations.

**RESEARCH ARTICLE: A Central Role for Free Heme in the Pathogenesis of Severe Sepsis**

*R. Larsen et al.*

Heme from red blood cells released in septic shock worsens organ dysfunction and increases the risk of death, but can be overcome by a scavenger of free heme.

## SCIENCEPODCAST

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Science Policy News and Analysis

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